AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a tryptophan residue in a first position corresponding to position 477 of SEQ ID NO: 2 and a tryptophan residue in a second position corresponding to position 479 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in transcriptional activation of a nuclear hormone receptor reporter construct.

2. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a tryptophan residue in a first position corresponding to position 477 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in transcriptional activation of a nuclear hormone receptor reporter construct.

3. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a tryptophan residue in a first position corresponding to position 479 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in transcriptional activation of a nuclear hormone receptor reporter construct.

4. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a tryptophan residue in a first position corresponding to position 302 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in transcriptional activation of a nuclear hormone receptor reporter construct.

5. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a tryptophan residue in a first position corresponding to position 315 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in transcriptional activation of a nuclear hormone receptor reporter construct.

6. (Currently Amended) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a phenylalanine residue in a first position corresponding to position 318 of SEQ ID NO: 2, which upon binding an epoxy

farnesoid-like ligand results in altered fluorescence with respect to the wild type *Drosophila melanogaster* protein Ultraspiracle~~transcriptional activation of a nuclear hormone receptor reporter construct~~.

7. (Currently Amended) ~~Another embodiment of this aspect of the invention relates to an~~An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a phenylalanine residue in a first position corresponding to position 328 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in altered fluorescence with respect to the wild type *Drosophila melanogaster* protein Ultraspiracle~~transcriptional activation of a nuclear hormone receptor reporter construct~~.

8. (Currently Amended) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having a phenylalanine residue in a first position corresponding to position 318 of SEQ ID NO: 2, and a phenylalanine residue in a second position corresponding to position 328 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in altered fluorescence with respect to the wild type *Drosophila melanogaster* protein Ultraspiracle~~transcriptional activation of a nuclear hormone receptor reporter construct~~.

9. (Currently Amended) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an tryptophan residue in a first position corresponding to position 498 of SEQ ID NO: 2, a tryptophan residue in a second position corresponding to position 499 of SEQ ID NO: 2, and phenylalanine residue in a third position corresponding to position 318 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in altered fluorescence with respect to the wild type *Drosophila melanogaster* protein Ultraspiracle~~transcriptional activation of a nuclear hormone receptor reporter construct~~.

10. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an tryptophan residue in a first position corresponding to position 498 of SEQ ID NO: 2, a tryptophan residue in a second position corresponding to position 499 of SEQ ID NO: 2, and phenylalanine residue in a third position corresponding to position 328 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in transcriptional activation of a nuclear hormone receptor reporter construct.

11. (Currently Amended) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an tryptophan residue in a first position corresponding to position 498 of SEQ ID NO: 2, a tryptophan residue in a second position corresponding to position 499 of SEQ ID NO: 2, and phenylalanine residue in a third position corresponding to position 318 of SEQ ID NO: 2, and phenylalanine residue in a fourth position corresponding to position 328 of SEQ ID NO: 2, which upon binding an epoxy farnesoid-like ligand results in altered fluorescence with respect to the wild type *Drosophila melanogaster* protein Ultraspiracle~~transcriptional activation of a nuclear hormone receptor reporter construct~~.

12-15. (Canceled)

16. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an alanine residue in a first position corresponding to position 472 of SEQ ID NO: 2 and leucine residue in a second position corresponding to position 475 of SEQ ID NO: 2, which has dominant negative nuclear hormone receptor activity.

17. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an arginine residue in a first position corresponding to position 302 of SEQ ID NO: 2, which has dominant negative nuclear hormone receptor activity.

18. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an arginine residue in a first position corresponding to position 293 of SEQ ID NO: 2, which has dominant negative nuclear hormone receptor activity.

19. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an alanine residue in a first position corresponding to position 288 of SEQ ID NO: 2, which has dominant negative nuclear hormone receptor activity.

20. (Previously Presented)An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an alanine residue in a first position

corresponding to position 366 of SEQ ID NO: 2, which has dominant negative nuclear hormone receptor activity.

21. (Previously Presented) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an alanine residue in a first position corresponding to position 366 of SEQ ID NO: 2 and an alanine residue in a second position corresponding to position 288 of SEQ ID NO: 2 which has dominant negative nuclear hormone receptor activity.

22. (Currently Amended) ~~The~~ A protein encoded by the isolated nucleic acid in ~~of~~ any one of claims 1 to 11.

23. (Currently Amended) A protein encoded by the isolated nucleic acid in ~~The protein of~~ any one of claims ~~12~~ 16 to 21 and 30.

24. (Withdrawn) A method of identifying ligands of nuclear hormone receptors comprising: contacting any of the mutant nuclear hormone receptor proteins of any of claims 1 to 22 with at least one candidate ligand; and determining whether there is a change in a physical property of the protein or a change in the transcriptional activity of the protein as a result of the contact between the protein and each candidate ligand.

25. (Withdrawn) A method of identifying a pest control agent comprising:

(a) contacting any of the mutant nuclear hormone receptor proteins of any of claims 1 to 22 with at least one candidate ligand;

(b) selecting the candidate ligand such that upon binding to the protein results in a change in a physical property of the protein or a change in the transcriptional activity of the protein;

(c) determining whether the selected ligand binds the wild type RXR.

26. (Withdrawn) A nuclear hormone receptor response element denoted by the formula YDRXZ comprising a direct repeat (DR) comprising two half sites separated by X nucleic acid bases; wherein Z indicates the presence of a forward DR sequence of 5'-

AGGTCA(N)$_x$AGGTCA-3' (SEQ ID NO: 8) and/or a reverse DR sequence of 5'-TGACCT(N)$_x$TGACCT-3'(SEQ ID NO: 9); wherein the element comprises at least one DR oriented in either a forward or reverse orientation; wherein Y equals1 to 8 forward and/or reverse direct repeats; and X equals 1 to about 12; with the proviso that the element is not 4DR12fffr.

27. (Withdrawn) A nuclear hormone receptor reporter construct comprising a nuclear hormone receptor response element, a promoter and a reporter nucleic acid sequence operably linked to one another; wherein the hormone receptor response element denoted by the formula YDRXZ comprising a direct repeat (DR) comprising two half sites separated by X nucleic acid bases; wherein Z indicates the presence of a forward DR sequence of 5'-AGGTCA(N)$_x$AGGTCA-3' (SEQ ID NO: 8) and/or a reverse DR sequence of 5'-TGACCT(N)$_x$TGACCT-3' (SEQ ID NO: 9); wherein the element comprises at least one DR oriented in either a forward or reverse orientation; wherein Y equals1 to 8 forward and/or reverse direct repeats; and X equals 1 to about 12; and wherein the promoter is selected from the group consisting of SEQ NOs: 3, 4, 5, 6 and 22; with the proviso that the element is not 4DR12fffr.

28. (Withdrawn) The nuclear hormone receptor reporter construct of claim 27, wherein the reporter nucleic acid sequence encodes luciferase.

29. (Withdrawn) A nuclear hormone receptor response reporter construct comprising an Aryl core (SEQ ID NO: 6) operably linked to two copies of an EcRERF (SEQ ID NO: 7) nuclear hormone receptor response element and a reporter nucleic acid.

30. (New) An isolated nucleic acid capable of hybridizing to SEQ ID NO: 1 under stringent conditions and encoding a protein having an arginine residue in a first position corresponding to position 314 of SEQ ID NO: 2, which has dominant negative nuclear hormone receptor activity.